

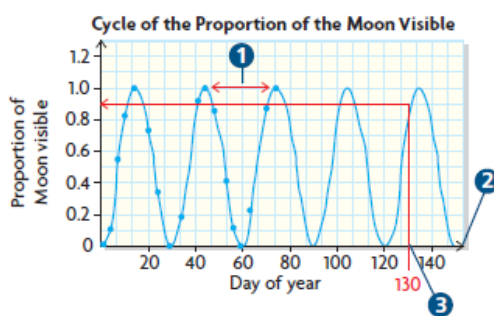
Periodic Phenomena Worksheet 6.2 p326

Characteristics of a Sine Function

Periodic Function - a function whose values are repeated at equal intervals of the independent variable

Apr 19-8:14 AM

David's Solution



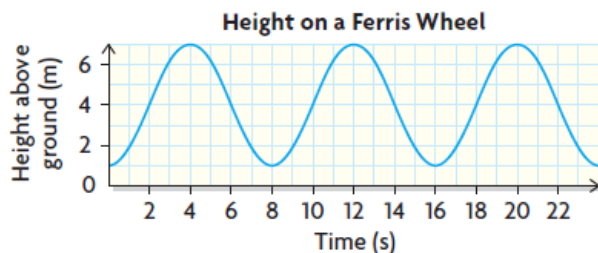
14 } 30 days
44

I drew a scatter plot with Day of year as the independent variable and Proportion of Moon visible as the dependent variable. Then I interpreted the pattern.

- 1 This graph has a repeating pattern. Its period is 30 days. I can tell because the proportion returns to 0 at 30 days, and the next part of the curve looks the same as the previous part.
- 2 I used the repeating pattern to extend the graph to 150 days.
- 3 I used the graph to estimate the proportion of the Moon visible on day 130.

Nov 12-7:39 AM

6. This is a graph of Nali's height above the ground in terms of time while riding a Ferris wheel.

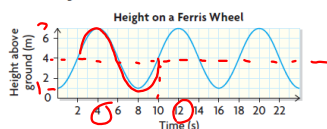


- What is the period of this function?
- What does the period represent?
- What is the diameter of the Ferris wheel? How do you know?
- Approximately how high above the ground is Nali at 10 s?
- At what times is Nali at the top of the wheel?
- When is Nali 4 m above the ground?

NEL

Nov 15-9:06 AM

6. This is a graph of Nali's height above the ground in terms of time while riding a Ferris wheel.



- What is the period of this function? *8 s*
- What does the period represent? *length of time 1 full rotation*
- What is the diameter of the Ferris wheel? How do you know? *6m*
- Approximately how high above the ground is Nali at 10 s? *4m*
- At what times is Nali at the top of the wheel? *4, 12, 20, 28...*
- When is Nali 4 m above the ground? *2, 6, 10, 14, 18...*

NEL

- 8s period*
- Time it takes to reach the same height again.*
- max = 7, min = 1, 7 - 1 = 6m*
- at 10s → 4m*
- 4s, 12s, 20s... 28s
extrapolation*
- 2s, 6s, 10s, 14s, 18s, 22s*

Nov 15-9:06 AM

⑥

period

Max

min

amp

equation of axis

Nov 8-10:17 AM

⑥

period

$$9-1 = 8 \text{ sec}$$

Max

7

min

1

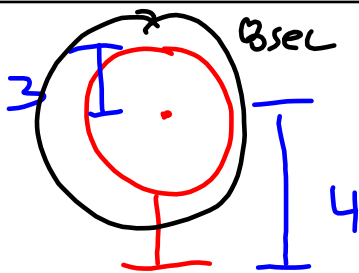
amp

$$a = \frac{\text{max} - \text{min}}{2} = \frac{7-1}{2} = 3$$

equation of axis

$$d = \frac{\text{max} + \text{min}}{2} = \frac{7+1}{2} = 4$$

Nov 8-10:17 AM



Assumptions

get on ride at axis

clockwise

Table of Values

0	4
2	7
4	4
6	1
8	4

Nov 8-10:21 AM

P 330 -333

q.1, 4, 5, 7, 9 & 10

Complete Worksheet First!!

Apr 23-2:28 PM

Equation

$$f(x) = a(x-h)^2 + k$$

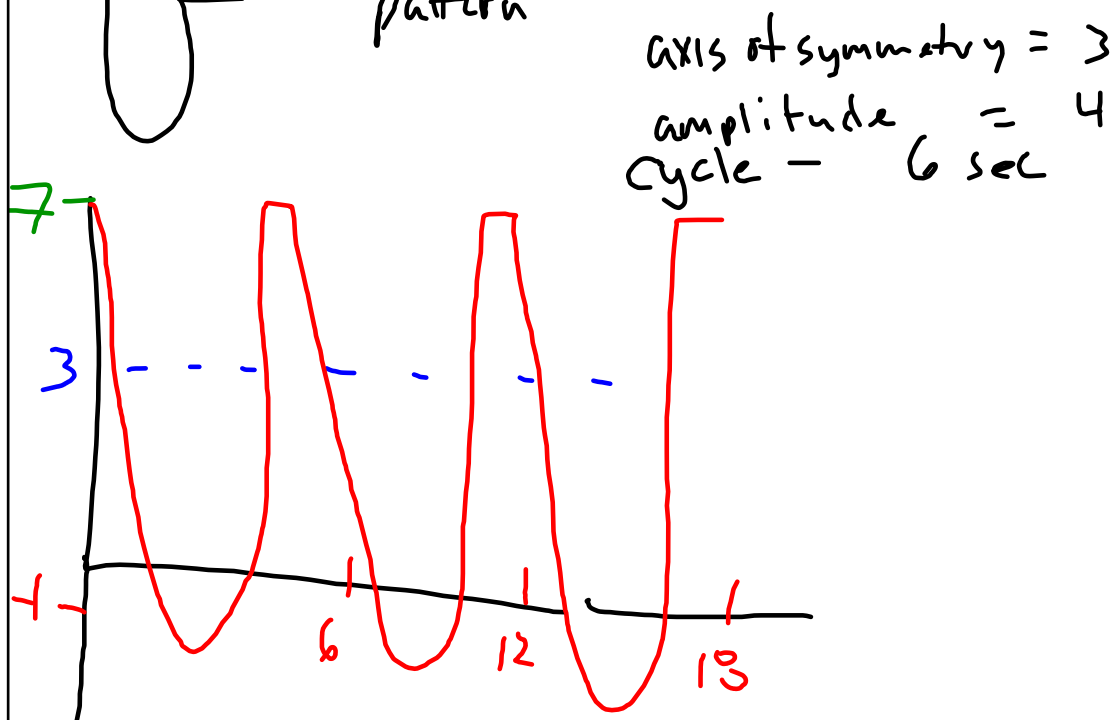
$$f(x) = a \sin(x-c) + d$$

ride

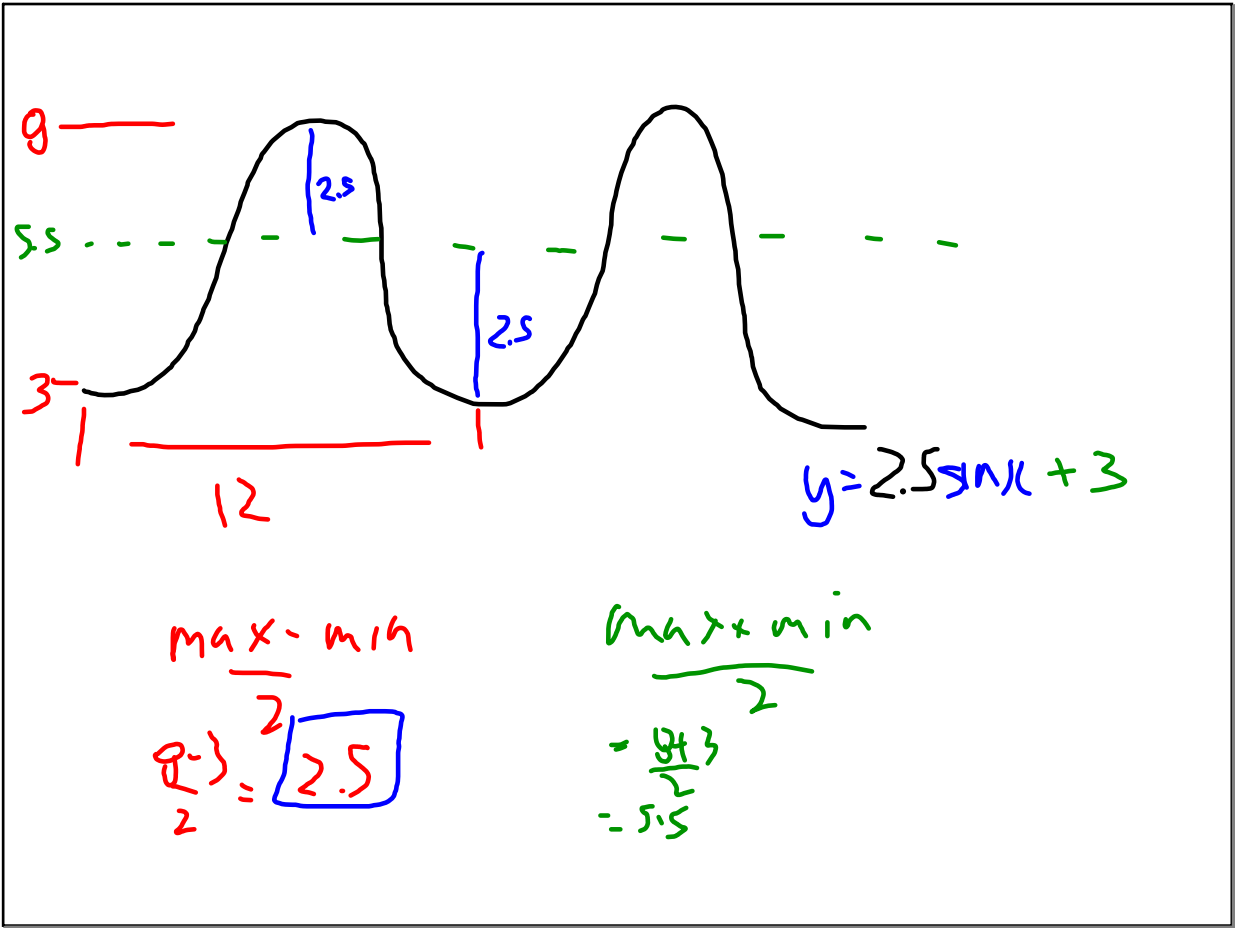
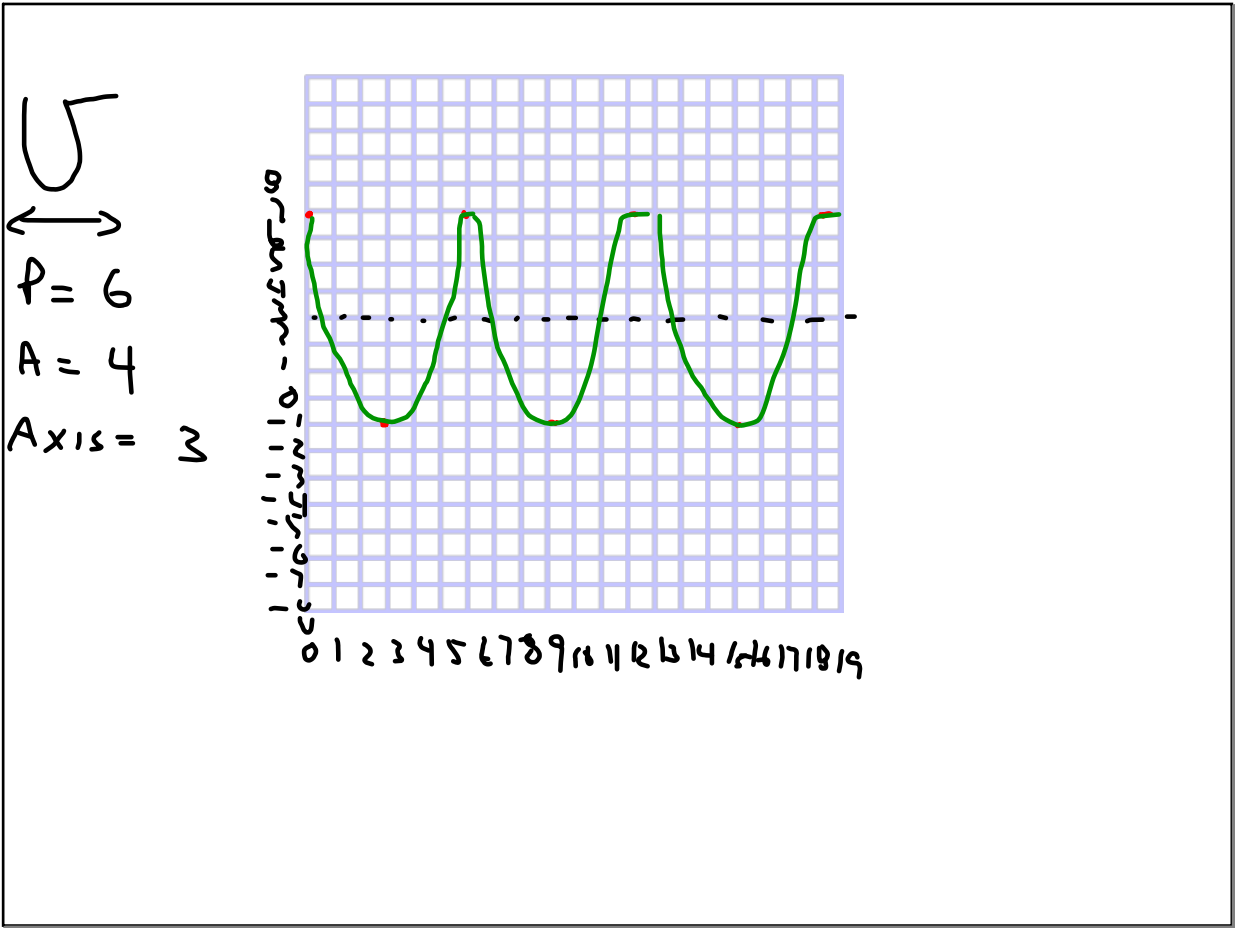
$$f(x) = 3 \sin(x-c) + 4$$

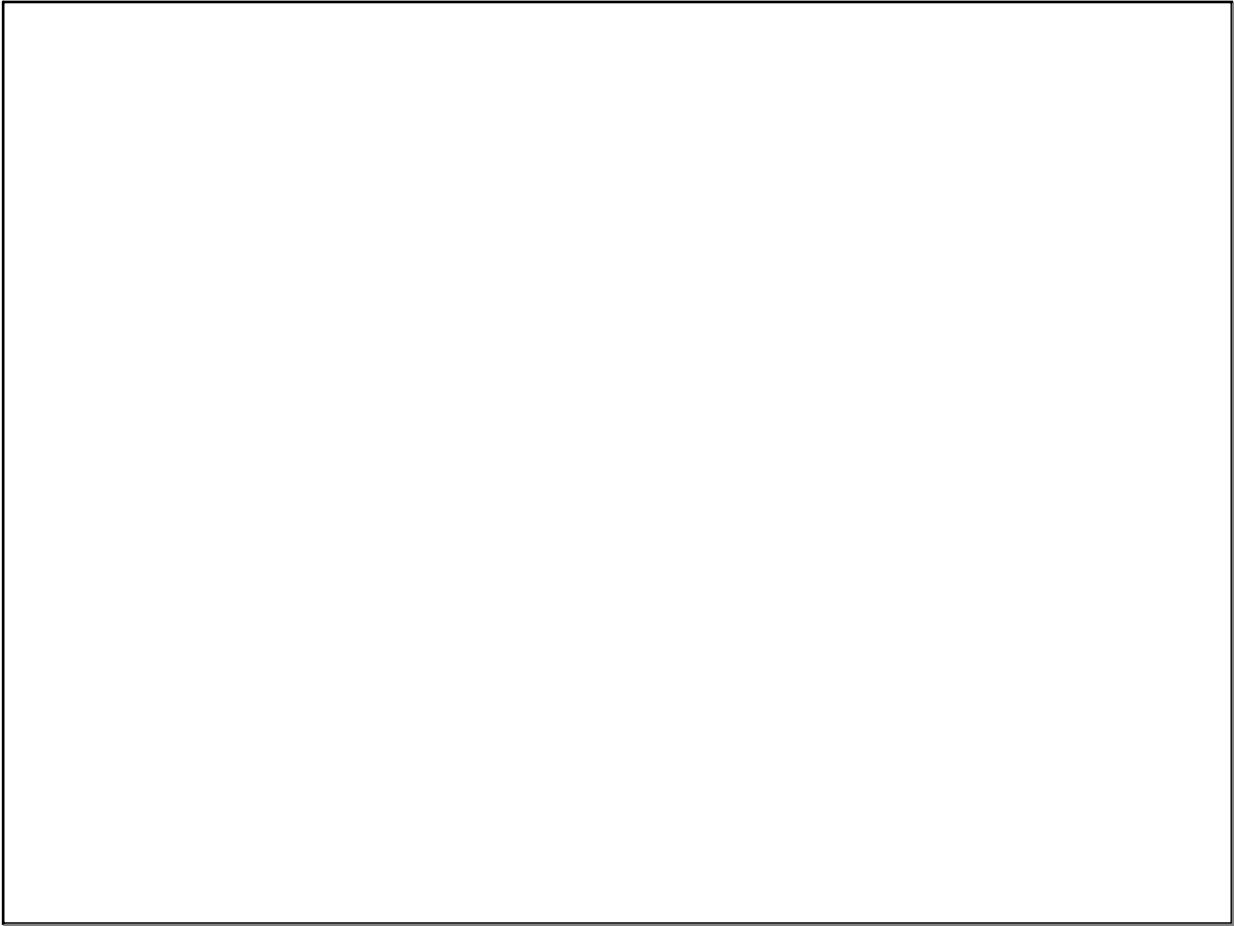
Nov 8-10:23 AM

Other Examples
Pattern



Apr 19-10:09 AM





Nov 8-10:33 AM